INTRODUCTION: P-glycoprotein, the product of the MDR1 gene, is expressed in distinct non-malignant cells, typically cells with secretory and excretory functions. It is assumed to function as an ATP-dependent drug efflux pump with broad substrate specificity. The highest expression of P-glycoprotein has been observed in kidney (proximal tubules), liver (bile canaliculi), adrenal gland and intestine, suggesting that the primary role of P-glycoprotein is in the normal secretion of physiological metabolites and ingested chemicals into bile, urine and the lumen of the intestinal tract. Elevated levels of P-glycoprotein have also been reported in multidrug-resistant cell lines and in colon, endometrial, ovarian, and breast tumors, as well as in sarcomas and leukemias/lymphomas.

REAGENTS PROVIDED: Mouse monoclonal antibody is provided in buffer containing 0.01M Phosphate Buffered Saline (PBS), 0.1% Sodium Azide (NaN₃) and 1% Bovine Serum Albumin (BSA) as carrier protein.

Concentrated Format: Cat No. 8710-01 [1ml] may be used with any detection system with final working dilutions optimized by the user.

Prediluted Formats: Not Available.

IMMUNOGEN: SDS-solubilized plasma membranes of a multidrug resistant Chinese hamster ovary (CHO) cell line and a human cell line.

SPECIFICITY: C219 recognizes an internal, highly conserved amino acid sequence (VQEALD & VQAALD) found in both Mdr1 and Mdr3 isoforms of P-glycoprotein. The specific binding of the clone C219 was stronger in epitope sequence VQAALD (N-Terminal fragment) than the epitope sequence VQEALD (C-terminal fragment) (Geoges E., et al., (1990). C219 is not species-specific. Immunohistochemical analysis of rat and human skeletal and cardiac muscle, as well as immunoblots of cardiac muscle tissue, have shown that C219 cross-reacts with a M₁ 200,000 protein which migrates in the same position as myosin. Also, in a recent publication, Liu BL., et al., has reported that the C219 mAB cross-reacts with the c-erbB2 protein (p185 c-erbB2). Care should be taken in the interpretation of true positive P-glycoprotein expression when using myosin-containing tissues or tissues known to have p185 c-erbB2 expression.

KNOWN APPLICATIONS: Immunohistochemistry, Immunocytochemistry, Western Blotting, and Immunoprecipitation
IMMUNOHISTOCHEMISTRY:

• Tissue sections: Formalin-fixed, paraffin-embedded tissues.

• Pretreatment: For optimal staining, the sections should be pretreated with an antigen unmasking solution such as Retrieve-All™ 1 (Cat No. 1910).

• Dilutions: The primary antibody (concentrated format) may be diluted to $\geq 1:25^*$ for Biotin based detection systems such as SIGNET’s USA™ ULTRA STREPTAVIDIN DETECTION [Cat No. 2250]. For optimal staining, the primary antibody should be incubated 20-60 minutes at room temperature.

*The above recommended dilution is a guideline. Optimal antibody dilution is a function of incubation time, temperature, and detection system sensitivity, and should be determined by the investigator.

• For Research Use Only.

STORAGE:  2 - 8 °C (short term)      -20°C for extended storage.

Avoid multiple freeze/thaw.

RECOMMENDED CONTROLS:

Positive tissue:
Cell Lines: Drug-sensitive parental cell lines and their multidrug-resistant derivatives.
Tissue: Human liver (positive staining detected along luminal surfaces of bile canaliculi) or human colon (positive staining localized to luminal surface of secretory epithelium).

Negative antibody: Normal mouse serum.

TECHNICAL SUPPORT: Please contact SIGNET Technical Support at (800) 223-0796 if you require assistance.

REFERENCES:


